DOCUMENT RESUME

ED 324 652 CS 010 271

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TITLE A Literature-Based Interdisciplinary Approach to the Teaching of Reading, Writing, and Mathematics.
PUB DATE Oct 90
NOTE 6p.; Paper presented at the Annual Plains Regional Conference of the International Reading Association (18th, Wichita, KS, October 17-20, 1990).
PUB TYPE Viewpoints (120)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Childrens Literature; Elementary Education; Instructional Materials; Integrated Curriculum; *Interdisciplinary Approach; Learning Activities; *Mathematics; *Reading; *Whole Language Approach; *Writing (Composition)

ABSTRACT

Using literature as a natural catalyst in an interdisciplinary approach, teachers can effectively bring the basics of reading, writing, and mathematics together to provide a learning atmosphere that promotes risk-taking as a natural and necessary part of learning. Integrating these areas throughout the curriculum enables students to develop a sense of purpose in content area classes. Such a sense of purpose will also help students recognize the connections between what is learned in school and what is used in real life. For students to realize a practical application of reading, writing, and mathematics, materials must be interesting and relevant. (MG)

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ED324652

A Literature-based Interdisciplinary Approach to the Teaching of Reading, Writing, and Mathematics

A Paper Presented at the IRA Regional Conference in Wichita, Kansas
October 17-20, 1990

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A Literature Based Interdisciplinary Approach to the Teaching of Reading, Writing, and Mathematics

Teachers use literature because it educates. Children learn about themselves and the connection among all humans from literature of all types (Simons 1988). Good literature engages children's attention and interest. Teachers can use literature as a springboard to extended thinking and learning activities.

Literature engages the teachers as well as the student. This dual engagement enhances the interactive aspect of teaching. The greater the quality of the interaction between teacher and students, the greater the achievement of student learning. This is especially true in the basics of literacy: reading, writing, and mathematics.

Using literature as a natural catalyst in an interdisciplinary approach, teachers can effectively bring the basics of reading, writing, and mathematics together to provide a learning atmosphere that promotes risk taking as a natural and necessary part of learning. Teachers can encourage this risk taking by urging students to explore language, including the language of mathematics, by using it in large amounts, in all its facets at all appropriate times. (Krogh, 1990) Another aspect of risk taking that teachers support is that of students probing for ideas, for learning does not occur by passive absorption alone (Resnick, 1987).

Reading, writing, and mathematics--the core of the elementary curriculum--need to be relevant and on the student's level of interest if the children are to retain knowledge and apply it in other situations (Farris & Kaczmarski, 1988). Integrating this core throughout the curriculum enables students to develop a sense of purpose in content

area classes (Ryan 1986). Such a sense of purpose will also help students recognize the connections between what is learned in school and what is used in real life.

In order for students to realize a practical application of reading, writing, and mathematics, materials must be interesting and relevant. At the same time, the activities planned by the teacher and the materials used in the lessons must provide the opportunity for students to apply previously learned knowledge. Activities must grow out of problem situations for learning occurs through active involvement with language and mathematics.

The naturalness of the language in good children's literature provides a vehicle that allows teachers to present interrelated activities in reading, writing, and mathematics.

The Cross-Country Cat is an example of what can be done using narrative text in a literature-based interdisciplinary program. In this beguiling adventure, Henry, a sassy Siamese cat, takes matters into his own "paws" when his family accidentally leaves him behind at the ski lodge. Henry's skiing trip home, and the animals he meets along the way, can easily capture the imagination of children.

Mathematical reasoning, justifying answers, and estimating are all important elements of classroom activities. Teaching mathematics appropriately with some "noncalculation" uses of numbers alerts children to the persuasive presence of various uses of numbers in their everyday world (Bell, 1980). Group interaction and a spirit of play with frequent invitations to count, to measure, to estimate will go a long way in eradicating children's notions that "math is what we do just before lunch".

Children's literature books that lend themselves to this integrated approach include:

The Wolf's Chicken Stew	by Keiko Kasza
The Mitten	by Alvin Tresselt
White Snow, Bright Snow	by Alvin Tresselt
Scary, Scary Halloween	by Eve Bunting
Cross Country Cat	by Mary Calhoun
The Queen Who Couldn't Bake Gingerbread	by Dorathy van Woerkom
Sam, Bangs, and Moonshine	by Evaline Ness
Jumanji	by Christan Alsburg
Sarah, Plain and Tall	by Patricia Machachlan
The Story of Jumping Mouse	by John Stejtoe
Ming Lo Moves the Mountain	by Arnold Lobrle

Samples of suggested activities can be obtained by writing the 2authors at Emporia State University, 1200 Commercial, Box 37, Emporia, KS 66801.

-Conclusion-

Reading, writing, and mathematics are more than the minimal basics in elementary education, more than collections of data and processes. Reading, writing, and mathematics are interrelated tools students need for a host of activities in the Information Age. Providing interdisciplinary activities for students to use these interrelated tools is a must if quality education is the goal.

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